[METRIC]
A-A-2962A
August 10, 1998
SUPERSEDING
A-A-2962
December 22, 1995

COMMERCIAL ITEM DESCRIPTION
Enamel, Alkyd, Exterior, Solvent based, Low VOC

The General Services Administration has authorized the use of this commercial item description as a replacement for Federal SpecificationTT-E-489, TT-E-527 and TT-E-529 for all federal agencies.

1.0 SCOPE. This description covers three gloss levels of lead and chromate free alkyd enamel for industrial maintenance coating on a wide range of metallic and non-metallic surfaces. Apply to surfaces that have been previously primed. Two coats are recommended for durable outdoor and indoor service. The paint shall meet current AIR POLLUTION REGULATIONS, of the Southern California Air Quality Management District, Rule 1113, Industrial Maintenance Coatings

2.0 CLASSIFICATION. There are three types and two classes.

Type I	Lusterless	Class A	340 gms/L VOC
Type II	Semigloss	Class B	420 gms/L VOC
Type III	Gloss		

3.0 SALIENT CHARACTERISTICS.

Characteristics	Requirements			Test Methods
	Type I Lusterless	Type II Semigloss	Type III Gloss	
Volatile Organic Content[1]				EPA Test Method 24
Class A	340 g/L	340 g/L	340 g/L	
Class B	420 g/L	420 g/L	420 g/L	
Salt spray resistance [3, 4]	Less than 5 mm creep	Less than 3 mm creep	Less than 3 mm creep	ASTM B-117
Accelerated weathering				
Loss of gloss	N/A	>65% orig'l	>65% orig'l	See Notes 3 & 5
Color change	<6 units*	<6 units*	<6 units*	" " " "
Chalking	slight (max)	slight (max)	slight (max)	" " " "
Water resistance				
Adhesion loss	None	None	None	ASTM D 3359
Surface wrinkling	None	None	None	See Notes 3 & 6
Softening	None	None	None	" " "
*lightness index				

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Engineering and Commodity Management Division (10FTE), 400 15TH St. SW, Auburn, WA 98001.

FSC 8010

3.0 SALIENT CHARACTERISTICS *(Continued)*

Characteristics	Requirements			Test Methods
	Lusterless	Semigloss	Gloss	
Total solids (wt. basis)	55% min.	55% min.	55% min.	ASTM D 1644
Total solids (vol. Basis)	38% min.	38% min.	38% min.	ASTM D 2697
Vehicle type	alkyd	alkyd	alkyd	ASTM D
" solids (N.V. wt. basis)	27% min.	40% min.	40% min.	ASTM D 2372
Gloss @ 60° (specular)	<4	15-25	>70 min. 20°	ASTM D 523
Contrast ratio (max.) @ 0.001" dry film thk.	#37925 **0.92** #33538 **0.88** #32246 **0.90** #13136 **0.90** # others **0.98**	#27925 **0.92** #23538 **0.88** #21136 **0.90** #others **0.98**	#17925 **0.94** #12197 **0.92** #12199 **0.88** #13538 **0.92** #13655 **0.88** #11105 **0.92** #11136 **0.92** #11140 **0.92** others **0.98**	ASTM D 2805
Viscosity (maximum)	199 secs	199 secs	199 secs	ASTM D 1200**
Flexibility	no cracking	no cracking	no cracking	ASTM D 522
Adhesion	3B rating +	3B rating +	3B rating+	ASTM D 3359
Recoating				
Loss of hardness.....	none	none	none	ASTM D 1474
Loss of adhesion.....	none	3B+ rating	3B+ rating	ASTM D 3359
Wrinkling	none	none	none	Visual
Drying time, to-touch	2 hrs	2 hrs	2 hrs	ASTM D 1640
Dry-through	8 hrs	8 hrs	8 hrs	" " "
Dry-hard	48 hrs	48 hrs	48 hrs	" " "
Water content (wt. basis of liquid enamel)	0.50% max	0.50% max	0.50% max	ASTM D 3792

** No. 4 Ford cup

3.1 Qualitative Requirements.

Color. This Commercial Item Description is not limited in color. If not otherwise specified in the purchase order or contract, the colors shall be a close visual match to Federal Standard 595B when applied to a black and white hiding chart until complete hiding is obtained, and tested in accordance with ASTM 1729. Black colors may be darker or "jetter" than specified.

Condition in container. The enamel shall be free from grit, seeds, skins, abnormal thickening, or "livering" in a freshly opened full can, and pigment settling shall be readily dispersible by either hand-stirring or a paint can shaker machine

Application properties. The enamel shall dry to a smooth and uniform film, free of defects of any kind, when applied in accordance with the manufacturer's recommendations.

Odor. The odor of the wet enamel and the dry film, and any interval of drying, - shall not be obnoxious to a panel of three, third-party testers.

Shelf life. Products supplied under this specification shall have 18 months (minimum) useful application life, at prolonged shelf temperatures from 4°C-31°C (40°- 90° F), after delivery to the purchasing organization or user activity.

Prohibited material. The manufacturer shall certify that the offered product does not contain benzene, chlorinated solvents, hydrolyzable chlorine derivatives, any EPA Class I or II ozone depleting compound, ethylene based glycol ethers or their acetates, mercury, lead, chromate nor any carcinogen, as defined in 29 CFR 1910.1200.

4.0 REGULATORY REQUIREMENTS.

4.1 **340 g/L maximum VOC**, meets Rule 1113, Architectural Coatings, "Industrial Maintenance Coatings", of the South Coast Air Quality Management District (Los Angeles basin).

4.2 **420 g/L maximum VOC**, meets Rule 1113, Architectural Coatings, "Multi Color Coatings" of the South Coast Air Quality Management District (Los Angeles basin).

4.3 EPA Method 24 is described in 40 CFR (Code of Federal Regulations), Part 60, July 1, 1995, or later method/amendment, if superseded.

5.0 QUALITY ASSURANCE PROVISIONS.

5.1 Responsibility for inspection. Unless otherwise specified in the contract or order, the Contractor is responsible for the performance of all inspection requirements marked by an asterisk in the Section 3.0 table. The Government reserves the right to perform any of the requirement inspections listed under 3.0 SALIENT CHARACTERISTICS, to assure that the enamel conforms to prescribed requirements.

5.2 Classification of inspections. Inspections shall be classified as follows:

5.2.1 Quality conformance inspection. All requirements listed under Section 3.0, or typical results may be offered for commercial products, based on earlier test results, provided they represent the same formulation and raw material sources. In case of dispute, questionable test results or questionable product quality, the Government reserves the right to require the manufacturer to demonstrate compliance to any Section 3.0 requirement, by a third party test laboratory or witness testing in the manufacturer's laboratory.

5.2.2 Inspection prior to delivery. Requirements are marked by an asterisk (*) in the table(s)

6.0 PACKAGING, LABELING and MATERIAL SAFETY DATA SHEETS (MSDS).

6.1 Packaging. Shall comply with the minimum applicable requirements in accordance with ASTM D 3951. Unless otherwise specified in the contract or purchase order, the material shall be supplied in the following size containers: 3.78 liter (1.0 gallon); 0.945 liter (1.0 quart) and 18.9 liter (5.0 gallons). Gallon and quart containers shall have resealable compression type lids. The top and bottom rims shall be compound-lined. Box packing shall be in accordance with normal commercial practice and shall be adequate to protect the product packaging in normal handling and shipping.

6.2 Labeling. Shall conform to ANSI Z129.1

Marking of containers. Each container shall be legibly marked with:

- Manufacturer's name and address
- Volatile organic content (VOC) g/L & lbs./gal
- Product number
- Generic type of coating
- Color
- Lot or batch number
- Date of manufacture (not if in lot or batch no.)
- Quantity of coating in container(s)
- Instructions for use
- Hazard warnings required by federal and state laws
- Shelf life between temperature range
- Recoat guidance
- Mixing ratios and procedures, if required

6.3 Product Technical Data. Shall be provided on a separate sheet containing, but not limited to the following information:

Application procedures
Theoretical volume solids
Theoretical weight solids
Material Safety Data Sheet (MSDS) (separate sheet)
Storage information
Surface preparation
Safety information

7.0 NOTES.

Note 1. Southern California Air Quality Management District Rule 1124; excluding water and exempt solvents.

Note 2. ASTM D 2369 may alternately be used to measure the VOC limit.

Note 3. Test panels. Obtain or prepare the required number of flat (3) 76 mm x 127 mm x 0.8 mm test coupons from any flat, cold-rolled, carbon steel sheet or plate. Abrade an entire face surface with 200-grit emery paper until the panel is uniform in appearance. Degrease the surface with clean lacquer thinner. Repeat as necessary to a uniform surface appearance. Use new Emory paper on each coupon. Prevent flash rusting by placing the prepared coupons in a oven set at 65° C (150°F), until use. Cool the coupons to room temperature before application of enamel in the following test procedures.

Note 4. Accelerated weathering. Prepare three steel test coupons as described in Note 3 above. Draw down a 5-cm (2.0 inch) wide film of enamel, using a 0.0030 inch gap clearance film applicator, onto two flat aluminum panels and air dry for 7 days, between 21-23°C and between 50-60% relative humidity. Measure the 60° specular gloss and 45° and 0° luminous directional reflectance of the coating. Subject the test panels to 168 hours of Xenon Arc weatherometer exposure, without water, in accordance with ASTM G 26. The test fails if more than one panel fails.

Note 5. Water Resistance. Prepare three steel test coupons as described in Note 3 above. Apply sufficient test enamel to an unprimed steel test panel to result in a uniform 1.0 +/-0.2 mil dry film. Any method of film application may be used provided a smooth and uniform results. Permit the film to cure by air drying for 7 days between 21-23°C and between 50-60% relative humidity. Seal the edges of the paint film with melted paraffin wax. Submerge the test coupons horizontally under 2.54 cm (1.0 inch) of 23° C tap water for 24 hours, remove and sponge dry. Repeat this procedure for seven (7) cycles with no more than 15 minutes before re-immersion. The enamel fails if more than one specimen shows even slight visual indication of "whitening-clouding", softening, lifting, blistering, change in color, loss of adhesion or hardness: Hardness shall be test 24 hours after last immersion and shall be greater than 90% of a control panel's hardness when tested in accordance with ASTM D1474, Method A.

Note 6. Hydrocarbon Resistance. Prepare three steel test coupons as described in Note 3 above. Apply sufficient test enamel to an unprimed steel test panel to result in a uniform 1.0 +/- 0.2 mil dry film. Any method of application may be used provided the film is smooth and uniform after air drying for 7 days between 21-23°C and 50-60% relative humidity. Do not seal the edges of the enamel film. Immerse the panel for 4 hours in a mixture of 70% (wt. basis) ACS reagent grades, 2,2,4-trimethyl pentane (isooctane) and 30% toluene. The test is failed if more than one test panel shows even slight visual indication of wrinkling, loss of adhesion or loss of hardness. Hardness shall be a minimum of 90% of control panel hardness when tested in accordance with ASTM D1474, Method A.

Note 7. Recoat. Using a 0.0030 inch gap film applicator, draw down a 2-inch wide film of test enamel on three clear glass panels. Permit the films to air-dry for 24 hours (dry-through) between 21-23 ° C and 50-60% relative humidity. Draw a 3-inch wide film of test enamel across the width of the first enamel film, using the same 0.0030 inch gap film applicator. After 24 hours at the same drying conditions, examine the enamel surfaces from the front and backside of the glass panels for compliance with the requirement. The enamel fails, if more than one panel fails the requirements measured against a control panel for adhesion (ASTM D 3359), hardness (ASTM D 1474), and visual surface wrinkling.

Document Sources.

Commercial Item Descriptions may be obtained from the Federal Supply Service Bureau (3FBP-W), Suite 8100, 470 East L'Enfant Plaza SW, Washington DC 20407.

ASTM standards are available from the Amercian Society for Testing and Materials, 100 Barr Harbor Drive, West Conshocken, PA 19428-2959. Use the most current ASTM test method to determine compliance.

Preparing Activity:
GSA-FSS